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Photovoltaic panels installed on rice fields

Can solar panels be used in rice farming?

A recent study led by researchers from the University of Tokyo explores a promising solution: integrating solar panels with traditional rice farming in a practice known as agrivoltaics.

Do photovoltaic systems affect rice crop yield?

Emerging interest in these systems led us to investigate their influence on rice crops. Various factors affecting rice crop yield, including fertilizer application, temperature, and solar radiation, were directly observed, and measured to evaluate changes associated with the shading rates of photovoltaic systems installed above rice crops.

Can photovoltaic systems improve paddy-field rice productivity?

This is the first study to investigate the influence of installing photovoltaic systems on the productivity of paddy-field rice, which is a staple crop cultivated in agricultural areas in Japan. This study provides novel results that may prove useful, not only in Japan, but also in other rice-producing countries.

Should agrivoltaics be used in rice farming?

Hence, incorporating agrivoltaics into large-scale commercial rice farming operations would provide the economic and environmental benefits of low-costs and distributed electricity generation. This research has expanded the use of rice fields to provide sustainable energy production using agrivoltaics.

In recent years, researchers from the University of Tokyo in Japan conducted a six-year field experiment using an agrivoltaics system in Chikusei, a city in Eastern Japan. The study focused ...

As reported in the Journal of Photonics for Energy, the research team installed a dual-axis sun-tracking photovoltaic (PV) system over a rice paddy in Miyada-mura, Nagano Prefecture. ...

Maintaining high crop productivity in rice fields hosting solar panels remains a major concern for agrivoltaic projects, as demonstrated by a recent research project conducted by the ...

In this approach, the photovoltaic panels are installed far enough above the crop canopy that the space beneath the panels can be used for agricultural production. Importantly, the additional ...

Scientists teamed up with rice farmers in Japan to harvest a new kind of crop from their fields -- solar power. According to Interesting Engineering, University of Tokyo researchers helped ...

A Japanese field study installed solar panels above crops and found rice yields remained stable compared to soybean and sweet potatoes, demonstrating the possibility of combining ...

This dual-axis tracking system is engineered to modulate the angle of PV panels based on temporal agricultural priorities. During the crucial growing season, the system optimizes panel ...

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The article from SPIE, titled "Solar panels and rice fields thrive together in Japanese agrivoltaics pilot," published on August 4, 2025, details a pioneering study led by researchers from ...

Agrivoltaic systems, comprising photovoltaic panels placed over agricultural crops, have recently gained increasing attention. Emerging interest in these systems led us to investigate their ...

Sun-tracking PV arrays hover three meters above rice fields, fine-tuned to support planting seasons and produce power at near household rates.

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